

CLAIMS:

1. A process comprising
continuously and simultaneously feeding an aqueous filler mixture comprising at least one filler, and an aqueous rubber emulsion or latex into a reactor system through separate feedlines to coagulate rubber on the surface of the filler and form a precipitation suspension of filled rubber granules, and
continuously discharging the resultant precipitation suspension from the reactor system;

wherein the reactor system comprises two or more reactors in series;

wherein coagulation is effected by lowering the pH, adding a water-soluble salt of metals of group IIa, IIb, IIIa, or VIII of the periodic table of the elements, or a combination thereof.
2. The process as claimed in claim 1, wherein the aqueous filler mixture is fed into the reactor system one or more fractions.
3. The process as claimed in claim 2, wherein at least one fraction is continuously fed into each reactor of the reactor system.
4. The process as claimed in claim 2, further comprising
continuously feeding a second aqueous filler mixture fraction to a second reactor in series.
5. The process as claimed in claim 4, further comprising
continuously feeding a third aqueous filler mixture fraction to a third reactor.
6. The process as claimed in claim 1, wherein the aqueous filler mixture and the rubber emulsion or latex, have an average residence time of from 0.1 second to 60 min in a first reactor.

7. The process as claimed in claim 1, wherein the aqueous mixture and the rubber emulsion or latex have an average residence time of from 0 to 480 min in a second and a third reactor in series.
8. The process as claimed in claim 1, wherein the pH in the first reactor is from 2.5 to 7.0.
9. The process as claimed in claim 1, wherein the pH in the first reactor is from 3.0 to 5.0.
10. The process as claimed in claim 1, further comprising adjusting the pH to different values in each reactor, wherein the pH sequentially decreases based on the pH in a first reactor.
11. The process as claimed in claim 1, wherein the process is carried out at a temperature of from 10 to 90°C.
12. The process as claimed in claim 1, wherein the process is carried out at a temperature of from 15 to 40°C.
13. The process as claimed in claim 1, wherein the filler is a naturally occurring filler or a synthetic filler selected from the group consisting of an industrial carbon black, a precipitated silicon, a fumed silica, a clay, an activated carbon, a high-surface-area substance, individually and a mixture thereof, in a proportion of from 20 to 99.9%.
14. The process as claimed in claim 1, wherein the rubber is selected from the group consisting of a natural rubber, an emulsion SBR, a butyl-acrylonitrile rubber, a butyl rubber, a terpolymer of ethylene, a terpolymer of propylene (EPM), a terpolymer of an unconjugated diene (EPDM), a butadiene rubber, a solution SBR, an isoprene rubber, a carboxy rubber, an epoxy rubber, a trans-polypenteneamer, a halogenated butyl rubber, a rubber derived from 2-chlorobutadiene, an ethylene-vinyl acetate copolymer, an epichlorohydrin, a modified natural rubber, and epoxidized grades of a natural rubber.

15. The process as claimed in claim 1, wherein the aqueous filler mixture, the rubber emulsion or latex, or both the aqueous filler mixture and the rubber emulsion or latex, further comprise at least one selected from the group consisting of zinc oxide, zinc stearate, stearic acid, a polyalcohol, a polyamine, a plasticizer, a stabilizer, a reinforcing resin, a flame retardant, $\text{Al}(\text{OH})_3$, $\text{Mg}(\text{OH})_2$, a pigment, ZnO , a crosslinking chemical, and sulfur.

16. The process as claimed in claim 1, wherein the process is carried out in the presence of one or more organosilicon compounds.

17. The process as claimed in claim 1, further comprising mechanically isolating a solid present in the precipitation suspension.

18. The process as claimed in claim 17, further comprising comminuting or granulating the solid.

19. The process as claimed in claim 17, further comprising drying the solid to a residual moisture level below 3%.

20. The process as claimed in claim 19, further comprising coating the solid with a coating material.

21. The process as claimed in claim 20, wherein an amount of from 0.1 to 3 phr of the coating material is applied to the solid.

22. The process as claimed in claim 21, wherein the coating material comprises stearic acid, silica, or zinc oxide.

23. A vulcanizable rubber mixture obtained by the process as claimed in claim 1.

24. A pigment, toner or ink comprising filled rubber granules prepared by the process as claimed in claim 1.

25. An adsorbent or absorbent comprising filled rubber granules obtained by the process as claimed in claim 1.